



A service of the National Library of Medicine
and the National Institutes of Health

My NCBI [?] [Sign In] [Register]

All Databases PubMed Nucleotide Protein Genome Structure OMIM PMC Journals Books

Search PubMed

for

Go

Clear

Limits Preview/Index History Clipboard Details

Display AbstractPlus

Show 20

Sort By

Send to

All: 1 Review: 0

☐ 1: Biochem Biophys Res Commun. 1983 Dec 28;117(3):859-65.

ELSEVIER
FULL-TEXT ARTICLE

Links

The amino acid sequence of an atrial peptide with potent diuretic and natriuretic properties.

Flynn TG, de Bold ML, de Bold AJ.

A 28 amino acid peptide with diuretic and natriuretic activity has been purified from rat atrial muscle. The primary structure of this atrial peptide is H-Ser-Leu-Arg-Arg-Ser-Ser-Cys-Phe-Gly-Gly-Arg-Ile-Asp-Arg-Ile-Gly- (sequence in text) Ala-Gln-Ser-Gly-Leu-Gly-Cys-Asn-Ser-Phe-(Arg)-Tyr-OH. The biological activity of this peptide is identical to that of atrial natriuretic factor and cardionatrin I isolated from rat atria.

PMID: 6230081 [PubMed - indexed for MEDLINE]

Related Links

Atriopeptins: bioactive peptides derived from mammalian cardiac atria. [J Hypertens Suppl. 1984]

Primary structure of murine major histocompatibility complex alloantigens: amino acid sequence of the amino-terminal one hundred and seventy-three residues of the H-2Kb glycoprotein. [Biochemistry. 1980]

Amino acid sequence and relative biological activity of eel atrial natriuretic peptide. [Biochem Biophys Res Commun. 1989]

The primary structure of human liver manganese superoxide dismutase. [J Biol Chem. 1984]

Differential structure-activity relationships of atrial peptides as natriuretics and renal vasodilators in the rat. [Biochem Biophys Res Commun. 1985]

See all Related Articles...

Display AbstractPlus

Show 20

Sort By



Send to

Write to the Help Desk

NCBI | NLM | NIH

Department of Health & Human Services

Privacy Statement | Freedom of Information Act | Disclaimer

[PubMed](#)
[Nucleotide](#)
[Protein](#)
[Genome](#)
[Structure](#)
[PMC](#)
[Taxonomy](#)
[OMIM](#)
[Books](#)

[Search Protein](#)
[for](#)

[Limits](#)
[Preview/Index](#)
[History](#)
[Clipboard](#)
[Details](#)

[Display](#)
[GenPept](#)
[Show 5](#)
[Send to](#)

Range: from to
 Features:
 ☐ SNP
 ☒ CDD
 ☒ HPRD

☐ **1:** [NP_006163](#). Reports natriuretic pepti...[gi:23510319]

[BLink](#), [Conserved Domains](#), [Links](#)

[Comment](#)
[Features](#)
[Sequence](#)

LOCUS NP_006163 151 aa linear PRI 25-SEP-2007
 DEFINITION natriuretic peptide precursor A [Homo sapiens].
 ACCESSION NP_006163
 VERSION NP_006163.1 GI:23510319
 DBSOURCE REFSEQ: accession [NM_006172.2](#)
 KEYWORDS .
 SOURCE Homo sapiens (human)
 ORGANISM [Homo sapiens](#)
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo.

REFERENCE 1 (residues 1 to 151)
 AUTHORS Ikeda,N., Yasu,T., Nishikimi,T., Nakamura,T., Kubo,N., Kawakami,M., Momomura,S. and Saito,M.
 TITLE N-terminal pro-atrial natriuretic peptide and exercise prescription in patients with myocardial infarction
 JOURNAL Regul. Pept. 141 (1-3), 154-158 (2007)
 PUBMED [17292492](#)
 REMARK GeneRIF: NPPA in patients with myocardial infarction may be a useful parameter to guide prescription of cardiac rehabilitation.

REFERENCE 2 (residues 1 to 151)
 AUTHORS Benedini,S., Flocchi,R., Battezzati,A., Sereni Piceni,L., Gamba,A., Mammana,C., Bevilacqua,M., Perseghin,G. and Luzi,L.
 TITLE Atrial natriuretic peptide in diabetic and nondiabetic patients with and without heart transplantation
 JOURNAL Transplant. Proc. 39 (5), 1580-1585 (2007)
 PUBMED [17580193](#)
 REMARK GeneRIF: circulating ANF was strongly associated with glucose tolerance status in diabetic and nondiabetic patients in heart transplantation.

REFERENCE 3 (residues 1 to 151)
 AUTHORS Jeoung,J.W., Kim,D.M., Ko,H.S., Park,S.S., Kim,J.Y., Kim,S.Y. and Yoo,T.W.
 TITLE Investigation of the association between normal-tension glaucoma and single nucleotide polymorphisms in natriuretic peptide gene
 JOURNAL Korean J Ophthalmol 21 (1), 33-38 (2007)
 PUBMED [17460430](#)
 REMARK GeneRIF: Nppa and Npr1 gene polymorphisms are not associated with normal-tension glaucoma, suggesting that this gene does not have an important role in the pathogenesis of optic neuropathy in this disease.

REFERENCE 4 (residues 1 to 151)
 AUTHORS Battle,M., Roig,E., Perez-Villa,F., Lario,S., Cejudo-Martin,P., Garcia-Pras,E., Ortiz,J., Roque,M., Orus,J., Rigol,M., Heras,M.,

Ramirez,J. and Jimenez,W.
 TITLE Increased expression of the renin-angiotensin system and mast cell density but not of angiotensin-converting enzyme II in late stages of human heart failure
 JOURNAL J. Heart Lung Transplant. 25 (9), 1117-1125 (2006)
 PUBMED [16962475](#)
 REMARK GeneRIF: Both ANP and BNP expression were higher in heart failure than in control samples.
 REFERENCE 5 (residues 1 to 151)
 AUTHORS Rubattu,S., Bigatti,G., Evangelista,A., Lanzani,C., Stanzione,R., Zagato,L., Manunta,P., Marchitti,S., Venturelli,V., Bianchi,G., Volpe,M. and Stella,P.
 TITLE Association of atrial natriuretic peptide and type a natriuretic peptide receptor gene polymorphisms with left ventricular mass in human essential hypertension
 JOURNAL J. Am. Coll. Cardiol. 48 (3), 499-505 (2006)
 PUBMED [16875975](#)
 REMARK GeneRIF: ANP/NPRA system significantly contributes to ventricular remodeling in human essential hypertension.
 REFERENCE 6 (sites)
 AUTHORS Wu,F., Yan,W., Pan,J., Morser,J. and Wu,Q.
 TITLE Processing of pro-atrial natriuretic peptide by corin in cardiac myocytes
 JOURNAL J. Biol. Chem. 277 (19), 16900-16905 (2002)
 PUBMED [11884416](#)
 REFERENCE 7 (sites)
 AUTHORS Yan,W., Wu,F., Morser,J. and Wu,Q.
 TITLE Corin, a transmembrane cardiac serine protease, acts as a pro-atrial natriuretic peptide-converting enzyme
 JOURNAL Proc. Natl. Acad. Sci. U.S.A. 97 (15), 8525-8529 (2000)
 PUBMED [10880574](#)
 REFERENCE 8 (sites)
 AUTHORS Watanabe,Y., Nakajima,K., Shimamori,Y. and Fujimoto,Y.
 TITLE Comparison of the hydrolysis of the three types of natriuretic peptides by human kidney neutral endopeptidase 24.11
 JOURNAL Biochem. Mol. Med. 61 (1), 47-51 (1997)
 PUBMED [9232196](#)
 REFERENCE 9 (residues 1 to 151)
 AUTHORS Suga,S., Nakao,K., Hosoda,K., Mukoyama,M., Ogawa,Y., Shirakami,G., Arai,H., Saito,Y., Kambayashi,Y., Inouye,K. et al.
 TITLE Receptor selectivity of natriuretic peptide family, atrial natriuretic peptide, brain natriuretic peptide, and C-type natriuretic peptide
 JOURNAL Endocrinology 130 (1), 229-239 (1992)
 PUBMED [1309330](#)
 REFERENCE 10 (residues 1 to 151)
 AUTHORS Vanneste,Y., Michel,A. and Deschodt-Lanckman,M.
 TITLE Hydrolysis of intact and Cys-Phe-cleaved human atrial natriuretic peptide in vitro by human tissue kallikrein
 JOURNAL Eur. J. Biochem. 196 (2), 281-286 (1991)
 PUBMED [1826098](#)
 REFERENCE 11 (residues 1 to 151)
 AUTHORS Porter,J.G., Arfsten,A., Fuller,F., Miller,J.A., Gregory,L.C. and Lewicki,J.A.
 TITLE Isolation and functional expression of the human atrial natriuretic peptide clearance receptor cDNA
 JOURNAL Biochem. Biophys. Res. Commun. 171 (2), 796-803 (1990)
 PUBMED [2169733](#)
 REFERENCE 12 (residues 1 to 151)
 AUTHORS Yandle,T.G., Brennan,S.O., Espiner,E.A., Nicholls,M.G. and Richards,A.M.
 TITLE Endopeptidase-24.11 in human plasma degrades atrial natriuretic

factor (ANF) to ANF(99-105/106-126)
 JOURNAL Peptides 10 (4), 891-894 (1989)
 PUBMED [2531377](#)
 REFERENCE 13 (sites)
 AUTHORS Yandle,T.G., Brennan,S.O., Espiner,E.A., Nicholls,M.G. and Richards,A.M.
 TITLE Endopeptidase-24.11 in human plasma degrades atrial natriuretic factor (ANF) to ANF(99-105/106-126)
 JOURNAL Peptides 10 (4), 891-894 (1989)
 PUBMED [2531377](#)
 REFERENCE 14 (sites)
 AUTHORS Vanneste,Y., Michel,A., Dimaline,R., Najdovski,T. and Deschodt-Lanckman,M.
 TITLE Hydrolysis of alpha-human atrial natriuretic peptide in vitro by human kidney membranes and purified endopeptidase-24.11. Evidence for a novel cleavage site
 JOURNAL Biochem. J. 254 (2), 531-537 (1988)
 PUBMED [2972276](#)
 REFERENCE 15 (residues 1 to 151)
 AUTHORS Yang-Feng,T.L., Floyd-Smith,G., Nemer,M., Drouin,J. and Francke,U.
 TITLE The pronatriodilatin gene is located on the distal short arm of human chromosome 1 and on mouse chromosome 4
 JOURNAL Am. J. Hum. Genet. 37 (6), 1117-1128 (1985)
 PUBMED [2934979](#)
 COMMENT PROVISIONAL [REFSEQ](#): This record has not yet been subject to final NCBI review. The reference sequence was derived from [M30262.1](#).

Sequence Note: removed 5 bases from the 5' end that did not align to the reference genome assembly.

Publication Note: This RefSeq record includes a subset of the publications that are available for this gene. Please see the Entrez Gene record to access additional publications.

FEATURES Location/Qualifiers
 source 1..151
 /organism="Homo sapiens"
 /db_xref="taxon:[9606](#)"
 /chromosome="1"
 /map="1p36.21"
[Protein](#) 1..151
 /product="natriuretic peptide precursor A"
 /note="pronatriodilatin; atrial natriuretic peptide"
[sig_peptide](#) 1..25
 /note="cardiodilatin-atrial natriuretic factor signal peptide"
 /calculated_mol_wt=2733
[mat_peptide](#) 26..92
 /product="cardiodilatin"
 /calculated_mol_wt=7368
[Region](#) 43..146
 /region_name="ANP"
 /note="Atrial natriuretic peptide; pfam00212"
 /db_xref="CDD:[64095](#)"
[Site](#) 123
 /site_type="modified"
 /experiment="experimental evidence, no additional details recorded"
 /note="proteolytic cleavage site"
 /citation=[[6](#)]
 /citation=[[7](#)]
 /db_xref="HPRD:[05573](#)"
[mat_peptide](#) 124..151

Site /product="atrial natriuretic factor"
/calculated_mol_wt=3083
127
/site_type="modified"
/experiment="experimental evidence, no additional details recorded"
/note="proteolytic cleavage site"
/citation=[8]
/citation=[14]
/db_xref="HPRD:00392"

Bond bond(130,146)
/bond_type="disulfide"
/experiment="experimental evidence, no additional details recorded"
/note="disulfide bridge bond"
/citation=[8]
/citation=[14]

Site 130
/site_type="modified"
/experiment="experimental evidence, no additional details recorded"
/note="proteolytic cleavage site"
/citation=[8]
/citation=[12]
/citation=[14]
/db_xref="HPRD:00392"

Site 134
/site_type="modified"
/experiment="experimental evidence, no additional details recorded"
/note="proteolytic cleavage site"
/citation=[8]
/citation=[14]
/db_xref="HPRD:00392"

Site 137
/site_type="modified"
/experiment="experimental evidence, no additional details recorded"
/note="proteolytic cleavage site"
/citation=[8]
/citation=[14]
/db_xref="HPRD:00392"

Site 139
/site_type="modified"
/experiment="experimental evidence, no additional details recorded"
/note="proteolytic cleavage site"
/citation=[8]
/citation=[14]
/db_xref="HPRD:00392"

Site 143
/site_type="modified"
/experiment="experimental evidence, no additional details recorded"
/note="proteolytic cleavage site"
/citation=[8]
/citation=[14]
/db_xref="HPRD:00392"

Site 148
/site_type="modified"
/experiment="experimental evidence, no additional details recorded"

CDS

```
/note="proteolytic cleavage site"  
/citation=[8]  
/citation=[14]  
/db_xref="HPRD:00392"  
1..151  
/gene="NPPA"  
/coded_by="NM_006172.2:95..550"  
/GO_component="extracellular region [PMID 14718574]"  
/GO_function="hormone activity"  
/GO_process="blood pressure regulation [PMID 6230082]  
[PMID 6547996]; physiological process; regulation of blood  
vessel size"  
/db_xref="CCDS:CCDS139.1"  
/db_xref="GeneID:4878"  
/db_xref="HGNC:7939"  
/db_xref="HPRD:00164"  
/db_xref="MIM:108780"
```

ORIGIN

```
1 mssfstttvs fllllafql1 gqtranpmyn avsnadlmdf knlldhleek mpledevvpp  
61 qvlsepneea gaalsplpev ppwtgevspa qrdggalgrg pwdssdrsal lksklrallt  
121 aprslrrssc fggrmdriga qsglgcnsfr y
```

//

(g)

i(rat)

↓

a

[Disclaimer](#) | [Write to the Help Desk](#)
[NCBI](#) | [NLM](#) | [NIH](#)

Aug 28 2007 16:53:42

26 aa

32 aa → Seidah et al.